

Appl. No. 10/685,464

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

Claims 1 - 22 (Cancelled)

23. (Previously Presented) A molded optical component comprising:

a supporting shaft section having a first cross-sectional area;

a connecting section integrally provided to the supporting shaft section and extended in an axial direction of the supporting shaft section, and the connecting section having a second cross-sectional area smaller than the first cross-sectional area; and

an optical functional section integrally provided to the connecting section,

wherein the sum weight of the supporting shaft section and the connecting section is greater than the weight of the optical functional section.

24. (Cancelled)

25. (Original) The molded optical component of claim 23, wherein the sum weight of the supporting shaft section and the connecting section is 70% or more of the total weight of the molded optical component.

26. (Previously Presented) The molded optical component of claim 23 further comprising:

an information-recording section provided on the supporting shaft section.

Appl. No. 10/685,464

27. (Previously Presented) The molded optical component of claim 23 further comprising:

an information-recording section provided on the connecting section.

28. (Previously Presented) The molded optical component of claim 23, wherein the first cross-sectional area is circular.

29. (Previously Presented) The molded optical component of claim 23, wherein the first cross-sectional area is trapezoidal.

30. (Previously Presented) The molded optical component of claim 23, wherein the first cross-sectional area is semicircular.

31. (Previously Presented) The molded optical component of claim 30, wherein a parallel flat portion that is almost in parallel with a chord section of the semicircular first cross-sectional area is formed on a part of an arc section of the semicylinder of the supporting shaft section.

32. (Previously Presented) The molded optical component of claim 31, wherein a truncated square pyramid-shaped protrusion is formed on the parallel flat portion.

33. (Previously Presented) The molded optical component of claim 32, wherein the protrusion has four side sections comprising a pair of longitudinal sides which face each other in

Appl. No. 10/685,464

the longitudinal direction of the supporting shaft section and a pair of lateral sides which face each other in the lateral direction, and wherein an angle formed between one of the pair of longitudinal sides and the parallel flat section is made to be 45° or less.

34. (Previously Presented) The molded optical component of claim 30, wherein a normal line on a chord section of the semicircular first cross-sectional area almost agrees with an optical axis on an optical functional surface of the optical functional section.

35. (Original) The molded optical component of claim 23, wherein a protruded portion is formed on the supporting shaft section.

36. (Previously Presented) The molded optical component of claim 35, wherein the protruded portion is shaped like a truncated square pyramid.

37. (Original) The molded optical component of claim 35, wherein a corner section of the protruded portion is chamfered.

38. (Original) The molded optical component of claim 23, wherein a concave portion is provided on the supporting shaft section.

39. (Original) The molded optical component of claim 23, wherein a stress-concentration portion is formed on the connecting section.

Appl. No. 10/685,464

40. (Previously Presented) The molded optical component of claim 39, wherein the stress-concentration portion is a V-shaped concave portion, which is concave in a direction perpendicular to an optical axis of an optical functional surface of the optical functional section.

41. (Previously Presented) The molded optical component of claim 39, wherein the stress-concentration portion is a V-shaped concave portion, which is concave in a direction the same as a direction of an optical axis of an optical functional surface of the optical functional section.

42. (Previously Presented) The molded optical component of claim 23, wherein an index section is provided on the connecting section on a basis of a distance from a center of the optical axis of the optical functional surface of the optical functional section.

43. (Original) The molded optical component of claim 42, wherein the index section is formed by cutting a mark in the connecting section.

44. (Original) The molded component of claim 42, wherein the index section is formed by protruding a mark from the connecting section.

45. (Original) The molded optical component of claim 42, wherein the index section is formed to be a straight line extended along the widthwise direction of the connecting section.

Appl. No. 10/685,464

46. (Original) The molded optical component of claim 42, wherein the index section is formed to be a locus of a circle having a prescribed radius whose center is on the optical axis.

47. (Previously Presented) A method of handling a molded optical component comprising steps of:

molding an optical component by a mold which is provided with a first resin flow path having a first cross-sectional area, a second resin flow path, which is in fluid communication with the first resin flow path and has a second cross-sectional area smaller than the first cross-sectional area, and an optical functional section forming cavity in fluid communication with the second resin flow path;

taking out the molded optical component from the mold, wherein the molded optical component comprises a supporting shaft section corresponding to the first resin flow path, a connecting section corresponding to the second resin flow path and an optical functional section corresponding to the optical functional section forming cavity;

handling the molded optical component on a basis of the supporting shaft section; and cutting the supporting shaft section of the molded optical component.

48. (Cancelled)

49. (Previously Presented) The method of claim 47, wherein the supporting shaft section is cut out at a predetermined section.

Appl. No. 10/685,464

50. (Original) The method of claim 49, wherein the supporting shaft section is cut out so as to have a predetermined length.

51. (Previously Presented) The method of claim 47, wherein the handling step comprises positioning the molded optical component.

52. (Previously Presented) The method of claim 47, wherein the step comprises holding the molded optical component.

53. (Previously Presented) The method of claim 47, wherein the handling step comprises mounting the molded optical component.

54. (Previously Presented) The method of claim 47, wherein the handling step comprises cutting the molded optical component.

55. (Previously Presented) The method of claim 47, wherein the handling step comprises a step of assembling the molded optical component with another member and thereafter a step of cutting the connecting section.

56. (Previously Presented) The method of claim 55, wherein the other member comprises a cartridge for conveyance.

Appl. No. 10/685,464

57. (Previously Presented) The method of claim 55, wherein the another member comprises an optical pickup unit.

58. (Previously Presented) The method of claim 47, wherein the handling step comprises recording information on the supporting shaft section.

59. (Previously Presented) The method of claim 47, wherein the handling step comprises recording information on the connecting section.

60. (Previously Presented) The method of claim 58, wherein the information comprises a reference number of a mold.

61. (Previously Presented) The method of claim 58, wherein the information comprises a reference number of a cavity.

62. (Previously Presented) The method of claim 58, wherein the step of recording information comprises marking the information.

63. (Previously Presented) The method of claim 58, wherein the step of recording information comprises printing the information.

64. (Previously Presented) The method of claim 58, wherein the step of recording information comprises pasting the information.

Appl. No. 10/685,464

65. (Previously Presented) The method of claim 47, wherein the first resin flow path is adapted to provide a protruded portion or a concave portion on the supporting shaft section, and the protruded portion or the concave portion is used as a guide for positioning the molded optical component.

66. (Previously Presented) The method of claim 47, wherein the first resin flow path is adapted to provide a protruded portion or a concave portion on the supporting shaft section, the protruded portion or the concave portion is used as a guide during handling.

Claims 67 - 83 (Cancelled)

84. (Previously Presented) A method of assembling an optical pickup unit comprising steps of:

mounting the optical functional section of the molded optical component described in claim 23 on an optical pickup apparatus while holding the supporting shaft section of the molded optical component; and

cutting the connecting section.

85. (Previously Presented) The method of claim 84, wherein the cutting step comprises removing the connecting section from the optical functional section so that the optical functional section becomes a circle-shaped optical functional section provided with no portion protruding from the circle-shaped optical functional section.

Appl. No. 10/685,464

86. (Original) The method of claim 84, wherein the weight of the supporting shaft section is greater than that of the optical functional section.

87. (Original) The method of claim 84, wherein the volume of the supporting shaft section is greater than that of the optical functional section.

88. (Previously Presented) A method of assembling a package comprising steps of:
mounting the optical functional section of the molded optical component described in claim 23 on a container while holding the supporting shaft section of the molded optical component; and
cutting the connecting section.

89. (Original) The method of claim 88, wherein the weight of the supporting shaft section is greater than that of the optical functional section.

90. (Original) The method of claim 88, wherein the volume of the supporting shaft section is greater than that of the optical functional section.

91. (Currently Amended) A molded optical component comprising:
a supporting shaft section having a first cross-sectional area ~~and an information recording section;~~
section;

Appl. No. 10/685,464

a connecting section integrally provided to the supporting shaft section and extended in an axial direction of the supporting shaft section, and the connecting section having a second cross-sectional area smaller than the first cross-sectional area; [[and]]

an optical functional section integrally provided to the connecting section; and

an information recording section provided on the supporting shaft section.

92. (Currently Amended) A molded optical component comprising:

a supporting shaft section having a first cross-sectional area ~~and an information recording section;~~

a connecting section integrally provided to the supporting shaft section and extended in an axial direction of the supporting shaft section, and the connecting section having a second cross-sectional area smaller than the first cross-sectional area; [[and]]

an optical functional section integrally provided to the connecting section; and

an information recording section provided on the connecting section.